

40 (Thrice Amended). A recombinant polypeptide comprising at least ten contiguous amino acids from SEQ ID NO:3, which polypeptide:

- (i) can induce the production of antibodies to *Helicobacter pylori* cytotoxin (CT) polypeptide and
- (ii) exhibits substantially no toxicity, or substantially reduced toxicity.

Please add new claims 54 - 101 as follows.

54 (New). The recombinant polypeptide of claim 40, wherein said polypeptide comprises at least fifteen contiguous amino acids from SEQ ID NO:3.

55 (New). The recombinant polypeptide of claim 40 or 54, said polypeptide further comprising a fragment or a derivative of a *Helicobacter pylori* CT polypeptide.

56 (New). The recombinant polypeptide of claim 55, wherein said polypeptide comprises a fragment of a *Helicobacter pylori* CT polypeptide.

57 (New). The recombinant polypeptide of claim 55, wherein said polypeptide comprises a derivative of a *Helicobacter pylori* CT polypeptide.

58 (New). The recombinant polypeptide of claim 40 or 54, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, a fragment thereof or a derivative thereof, which is immunologically identifiable with the protein encoded by the amino acid of SEQ ID NO:3.

Sub
Gul 7
59 (New). The recombinant polypeptide of claim 40 or 54, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, a fragment thereof or a derivative thereof, which contains one or more amino acid substitutions or deletions which do not substantially affect the functional aspects of said polypeptide.

F2
Cont 2
60 (New). The recombinant polypeptide of claim 59, wherein said amino acid substitution is a conservative amino acid replacement.

Sub
Gul 7
61 (New). The recombinant polypeptide of claim 55, said polypeptide comprising at least 87 kDa.

62 (New). The recombinant polypeptide of claim 55, said polypeptide comprising at least 100 kDa.

Sub
m
63 (New). A recombinant polypeptide expressed from at least 15 contiguous nucleotides of SEQ ID NO:2, wherein said polypeptide:

- (i) can induce the production of antibodies to *Helicobacter pylori* CT polypeptide and
- (ii) exhibits substantially no toxicity, or substantially reduced toxicity.

64 (New). The recombinant polypeptide of claim 63, said polypeptide expressed from at least 30 contiguous nucleotides of SEQ ID NO:2.

65 (New). The recombinant polypeptide of claim 63, said polypeptide expressed from at least 45 contiguous nucleotides of SEQ ID NO:2.

66 (New). The recombinant polypeptide of claims 63 - 65, said polypeptide further comprising a fragment or a derivative of a *Helicobacter pylori* CT polypeptide.

67 (New). The recombinant polypeptide of claim 66, said polypeptide comprising a fragment of a *Helicobacter pylori* CT polypeptide.

68 (New). The recombinant polypeptide of claim 66, said polypeptide comprising a derivative of a *Helicobacter pylori* CT polypeptide.

F2
cont'd
sub
G3
69 (New). The recombinant polypeptide of claim 63 - 65, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, a fragment thereof or a derivative thereof, which is immunologically identifiable with the protein encoded by the amino acid of SEQ ID NO:3.

70 (New). The recombinant polypeptide of claim 63 - 65, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, a fragment thereof or a derivative thereof, which contains one or more amino acid substitutions or deletions which do not substantially affect the functional aspects of said polypeptide.

71 (New). The recombinant polypeptide of claim 70, wherein said amino acid substitution is a conservative amino acid replacement.

72 (New). The recombinant polypeptide of claim 66, said polypeptide comprising at least 87 kDa.

73 (New). The recombinant polypeptide of claim 66, said polypeptide comprising at least 100 kDa.

sub 74 (New). An immunogenic, recombinant polypeptide comprising at least 10 contiguous amino acids of SEQ ID NO:3, and further wherein said polypeptide exhibits substantially no toxicity or substantially reduced toxicity.

75 (New). The recombinant polypeptide of claim 74, said polypeptide comprising at least 15 contiguous amino acids of SEQ ID NO:3.

F2
correl
76 (New). The recombinant polypeptide of claims 74 or 75, said polypeptide comprising an immunogenic fragment or an immunogenic derivative of a *Helicobacter pylori* CT polypeptide.

77 (New). The recombinant polypeptide of claim 76, said polypeptide comprising an immunogenic fragment of a *Helicobacter pylori* CT polypeptide.

78 (New). The recombinant polypeptide of claim 76, said polypeptide comprising an immunogenic derivative of a *Helicobacter pylori* CT polypeptide.

sub 79 (New). The recombinant polypeptide of claim 74 or 75, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, an immunogenic fragment thereof or an immunogenic derivative thereof, which is immunologically identifiable with the protein encoded by the amino acid of SEQ ID NO:3.

80 (New). The recombinant polypeptide of claim 74 or 75, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, an immunogenic fragment thereof or an immunogenic derivative thereof which contains one or more amino acid substitutions or deletions which do not substantially affect the functional aspects of said polypeptide.

DOCKET NO.: CHIR-0158 (0316.005)
PATENT APPLICATION

SERIAL NO.: 09/360,934
FILED: JULY 26, 1999

81 (New). The recombinant polypeptide of claim 80, wherein said amino acid substitution is a conservative amino acid replacement.

82 (New). The recombinant polypeptide of claim 76, said polypeptide comprising at least 87 kDa.

83 (New). The recombinant polypeptide of claim 76, said polypeptide comprising at least 100 kDa.

84 (New). An immunogenic, recombinant polypeptide expressed from at least 15 contiguous nucleotides of SEQ ID NO:2, wherein said polypeptide exhibits substantially no toxicity or substantially reduced toxicity.

85 (New). The recombinant polypeptide of claim 84, said polypeptide expressed from at least 30 contiguous nucleotides of SEQ ID NO:2.

86 (New). The recombinant polypeptide of claim 84, said polypeptide expressed from at least 45 contiguous nucleotides of SEQ ID NO:2.

87 (New). The recombinant polypeptide of claims 84 - 86, said polypeptide further comprising an immunogenic fragment or an immunogenic derivative of a *Helicobacter pylori* CT polypeptide.

88 (New). The recombinant polypeptide of claim 87, said polypeptide comprising an immunogenic fragment of a *Helicobacter pylori* CT polypeptide.

DOCKET NO.: CHIR-0158 (0316.005)
PATENT APPLICATION

SERIAL NO.: 09/360,934
FILED: JULY 26, 1999

89 (New). The recombinant polypeptide of claim 87, said polypeptide comprising an immunogenic derivative of a *Helicobacter pylori* CT polypeptide.

Sub
G7
F2
Cont'd
90 (New). The recombinant polypeptide of claim 84 - 86, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, an immunogenic fragment thereof or an immunogenic derivative thereof, which is immunologically identifiable with the protein expressed by the polynucleotide sequence of SEQ ID NO:2.

91 (New). The recombinant polypeptide of claim 84 - 86, said polypeptide further comprising a *Helicobacter pylori* CT polypeptide, an immunogenic fragment thereof or an immunogenic derivative thereof which contains one or more amino acid substitutions or deletions which do not substantially affect the functional aspects of said antigen.

92 (New). The recombinant polypeptide of claim 91, wherein said amino acid substitution is a conservative amino acid replacement.

Sub
G8
93 (New). The recombinant polypeptide of claim 87, said polypeptide comprising at least 87 kDa.

94 (New). The recombinant polypeptide of claim 87, said polypeptide comprising at least 100 kDa.

549
HS 7

95 (New). A recombinant polypeptide of a *Helicobacter pylori* cytotoxin, wherein:

- (i) said cytotoxin causes the formation of vacuoles in eukaryotic cells,
- (ii) said recombinant polypeptide exhibits substantially no toxicity, or substantially reduced toxicity, and
- (iii) said recombinant polypeptide can induce the production of antibodies to a *Helicobacter pylori* cytotoxin.

F2
cancel

96 (New). The recombinant polypeptide of claim 95, wherein said cytotoxin causes the formation of vacuoles in eukaryotic epithelial cells.

97 (New). The recombinant polypeptide of claim 95, wherein said polypeptide comprises at least 10 contiguous amino acids from SEQ ID NO:3.

98 (New). The recombinant polypeptide of claim 95, wherein said polypeptide comprises at least 15 contiguous amino acids from SEQ ID NO:3.

99 (New). The recombinant polypeptide of claim 95, wherein said polypeptide is expressed from at least 15 contiguous nucleotides from SEQ ID NO:2.

sub
G9 7

100 (New). The recombinant polypeptide of claim 95, wherein said polypeptide is expressed from at least 30 contiguous nucleotides from SEQ ID NO:2.

101 (New). The recombinant polypeptide of claim 95, wherein said polypeptide is expressed from at least 45 contiguous nucleotides from SEQ ID NO:2.

REMARKS

Claims 38 – 40, and 42 are pending.